

What is claimed is:

1. A method of manufacturing a battery having a positive electrode and a negative electrode, and electrolyte layers, comprising a step of:

forming the electrolyte layers by pushing electrolyte filled in a filling unit at least in one side of either the positive electrode or the negative electrode from the filling unit by means of a pressurization means.

2. A method of manufacturing a battery according to claim 1 comprises steps of forming a plurality of electrolyte layers by intermittently delivering electrolyte on at least one face of at least one electrode in either the positive electrode or negative electrode;

wherein the positive electrode and the negative electrode has a belt shape; and

cutting the electrode between the electrolyte layers formed intermittently.

3. A method of manufacturing a battery according to claim 2 comprises steps of intermittently forming electrode mixture layers including electrode active materials on at least one face of an electrode collector; and

forming the electrolyte layers on at least one face of the electrode mixture layers following the former step.

4. A method of manufacturing a battery according to claim 3, wherein the electrode mixture layers are formed on both faces of the electrode collector, and regions on which the electrode mixture layers are formed are

positioned differently in a surface and a back of the electrode collector respectively.

5. \ A method of manufacturing a battery according to claim 1, wherein the positive electrode or the negative electrode is conveyed with a conveying means as being formed the electrolyte layers thereon.

6. A method of manufacturing a battery according to claim 5, wherein the conveying means is disposed away from a delivering open of a filling unit in a predetermined distance and includes a roller capable of adjusting the distance to the filling unit in a position opposite to the delivering open of the filling unit; and

the positive electrode and the negative electrode are conveyed in a position just under the delivering open of the filling unit as the backs of the positive electrode and the negative electrode contact with the roller.

7. Δ A method of manufacturing a battery according to claim 6, the electrolyte is pushed from a direction where an angle is within a range of 80° to 100° in response to a tangent direction of the roller in the position just under the delivering open of the filling part.

8. A method of manufacturing a battery according to claim 1, the electrolyte is delivered as being applied heat for adjusting its viscosity.

9. A method of manufacturing a battery according to claim 1, wherein the electrolyte is delivered in a state where the electrolyte is applied to heat in order to possess its viscosity within a range of 0.001 Pa·s to 0.05 Pa·s.

10. A method of manufacturing a battery according to claim 2,

wherein the electrolyte is intermittently delivered by an open-and-close movement of a shutter disposed in an electrolyte flowing path of a electrolyte-delivering machine.

11. A method of manufacturing a battery according to claim 2, wherein after the electrolyte is delivered and dried, the electrolyte layers are formed on an electrode face; and

comprises a step of rolling the electrode face with a plastic film.

12. A method of manufacturing a battery according to claim 1, wherein as for the electrolyte, electrolyte salt and macromolecular compounds are included.

13. A method of manufacturing a battery according to claim 12, wherein as for the electrolyte, nonaqueous solvents are further included.

14. A method of manufacturing a battery according to claim 12, wherein as for the lithium salt, at least one material among a group of LiPF_6 , LiAsF_6 , LiBF_4 , LiClO_4 , LiCF_3SO_3 , $\text{Li}(\text{CF}_3\text{SO}_2)_2\text{N}$ or $\text{LiC}_4\text{F}_9\text{SO}_3$ is included.

15. A method of manufacturing a battery according to claim 12, wherein as for the macromolecular compounds, at least one material among polyvinylidene fluoride, polyacrylonitrile, acrylonitrile butadiene-rubber, acrylonitrile butadiene styrene resin, acrylonitrile polyethylene chloride propylene diene styrene resin, acrylonitrile vinyl chloride resin, acrylonitrile metaacrylate resin, acrylonitrile acrylate resin, polyethylene oxide, or, polyether denatured siloxane, copolymer made of polyvinylidene fluoride combined with other macromolecular compounds,

copolymer made of polyacrylonitrile combined with other macromolecular compounds, copolymer made of polyethylene oxide combined with other macromolecular compounds is included.

16. A method of manufacturing a battery according to claim 13, wherein as for the nonaqueous solvents, at least one material among a group of ethylene carbonate, propylene carbonate, butylenes carbonate, γ -butyl lactone, γ -valerolactone, diethoxyethane, tetrahydrofuran, 2-methyltetrahydrofuran, 1,3-dioxolane, methyl acetate, methyl propionic acid, dimethyl carbonate, diethyl carbonate, ethylmethyl carbonate, 2,4-difluoroanisole, 2,6-difluoroanisole, or, 4-bromoveratrol is included.

17. A method of manufacturing a battery according to claim 1, wherein the positive electrode includes lithium mixed oxide shown in a composition formula Li_xMO_2 (here, x satisfies $0.05 \leq x \leq 1.12$, and M is more than one kind of transition metal) wherein the negative electrode includes as the material capable of occluding and releasing lithium, at least one material among a group of carbonaceous materials, silicon, silicon compounds, metal oxide, macromolecular materials is included.

18. A coating machine comprising :

a nozzle for delivering coating materials;

a conveying means for conveying a body-to-be-coated disposed in a position opposite to the nozzle and moving the coated body relative to the nozzle;

a pressurization means for applying the coating materials on the

body-to be-coated while being conveyed via the nozzle with the conveying means;

a closing means for closing a flowing path of the coating materials inside the nozzle

a control means for intermittently driving the closing means in a manner to intermittently deliver the coating materials from the nozzle.

19. A coating machine according to claim 18, wherein the conveying means is provided with a roller for supporting the body-to be-coated at the back in the position opposite to the nozzle.

20. A coating machine according to claim 18, a top part of the nozzle having a delivering open for delivering the coating materials is provided with a top face orthogonal to the flowing path of the coating materials and inclined faces positioned in a conveying direction of the body-to be-coated and in an opposite direction of that direction in the top face.

21. A coating machine according to claim 20, wherein the inclined faces in the top part of the nozzle has an angle in the range of 50° to 120° for the top face of the nozzle in the conveying direction of the body-to be-coated and has an angle in the range of 10° to 45° for the top face of the nozzle in the opposite direction relative to the conveying direction of the body-to be-coated.

22. A coating machine according to claim 18, wherein the closing means has a bearing whose cross sectional face is a circular shape disposed in the middle of the flowing path of the coating materials; and

an open-and-close shaft whose cross sectional face is a semi

circular shape has a rotatable notch in a part of the bearing.

23. A coating machine according to claim 18, wherein the coating materials are employed as electrolyte;

the coated body is employed as an electrode such as a positive electrode or a negative electrode; and

a plurality of electrolyte layers is intermittently formed thereon.

24. A coating machine according to claim 23, wherein the electrode which a plurality of electrode mixture layers including electrode active materials is intermittently formed on an electrode collector is employed in order to form the electrolyte layers on the electrode mixture layers.

25. A coating machine according to claim 24 comprises a detecting means for detecting ends of the electrode mixture layers, which are intermittently formed; and

a control means for controlling movement of the pressurizing means and the closing means on the basis of a timing detected by the detecting means.

26. - A coating machine according to claim 18, wherein the electrode mixture including electrode active materials is employed as the coating materials;

the body-to-be-coated is employed as an electrode collector; and

a plurality of the electrode mixture layers including the electrode mixture is intermittently formed on the electrode collector.